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Physalidiella pentagona sp. nov. from Guizhou, China

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Abstract—A new species, *Physalidiella pentagona*, collected on dead twigs of *Lindera communis* in Guizhou Province, China, is described and illustrated. The fungus is mainly characterized by differentiated conidiophores with opposite or verticillate short branches and monoblastic, percurrently extending conidiogenous cells that produce solitary, smooth, quasi-stellate or T-shaped conidia with an approximately pentagonal central cell and two smaller hemispherical lateral cells. A dichotomous key to *Physalidiella* species is provided.

Key words—hyphomycetes, saprophytic fungi, taxonomy

Introduction

Physalidiella Rulamort was originally established by Rulamort (1990) with *Physalidium elegans* Luppi Mosca [≡ *Physalidiella elegans* (Luppi Mosca) Rulamort] as the type species, which was collected from stubble of *Triticum* in Italy. Morelet (1995) added a second species, *P. matsushimae* (R.F. Castañeda & W.B. Kendr.) M. Morelet [≡ *Physalidium matsushimae* R.F. Castañeda & W.B. Kendr.], with a type specimen from Cuba on rotten leaves of *Cupania americana*. Only these two species have been recognized in this genus. *Physalidiella* is characterized by macronematous, mononematous

conidiophores with short branches arranged in verticils, and monoblastic, integrated, terminal, determinate or occasionally percurrently extending conidiogenous cells that produce solitary, acrogenous, smooth conidia which are composed of an obovoid, ellipsoidal, fusiform-ventricose, biconic or approximately pentagonal, mid to dark brown central cell and two smaller, hemispherical, subspherical or obturbinate, hyaline to subhyaline, lateral cells (Ellis 1971, Rulamort 1990, Seifert & al. 2011).

A survey of saprobic microfungi on dead twigs from subtropical forest in Guizhou Province of China has revealed a previously undescribed *Physalidiella* species. The specimen is deposited in the Mycological Herbarium of Zunyi Normal College, Zunyi, China (HMZNC).

Physalidiella pentagona Z.J. Xiao & Xiao X. Li, **sp. nov.** Fig. 1

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Differs from *Physalidiella elegans* and *P. matsushimae* by its percurrently extending conidiogenous cells, and its conidia with an approximately pentagonal or turbinate, slightly shorter middle cell.

Type: China, Guizhou Province: Xishui National Nature Reserve, saprobic on dead twigs of *Lindera communis* Hemsl. (*Lauraceae*), 31 Dec. 2018, Xiao X. Li (**Holotype**, HMZNC 0687).

Etymology: *pentagona*, refers to the shape of middle conidial cell.

Colonies on the dead twigs effuse, arachnoid or velvety, brown. Mycelium partly superficial and partly immersed in the substrate, composed of branched, septate, pale brown to brown, cylindrical, smooth-walled hyphae, 2–3 µm wide. Conidiophores macronematous, mononematous, single or in groups of 2–4, with short branches arranged in verticils: stipe straight or flexuous, subulate, smooth, thick-walled, 5–11-septate, 95–245 × 4–9.5 µm, brown to dark brown, usually a swollen node being formed by stipe extension in the upper portion of stipe, 6.5–10.5 µm wide, pale brown towards the apex, slightly swollen at the base, dark brown, 4.5–12 µm wide; short branches arising just below the stipe septa, opposite or verticillate, subulate, 7.5–24 µm long, 2–5 µm wide at the base, 0–4-septate, pale brown to brown. Conidiogenous cells monoblastic, integrated, terminal on stipe and short branches, subulate, doliiform, lageniform or cylindrical, with up to 4 successive percurrent extensions, pale brown, 1–2.5 µm wide at the apex. Conidia solitary, dry, acrogenous, smooth, complex, quasi-stellate or T-shaped, with a central cell approximately pentagonal or turbinate, smooth-walled, mid to dark brown, 5.5–8.5 × 5–7.5 µm, angled

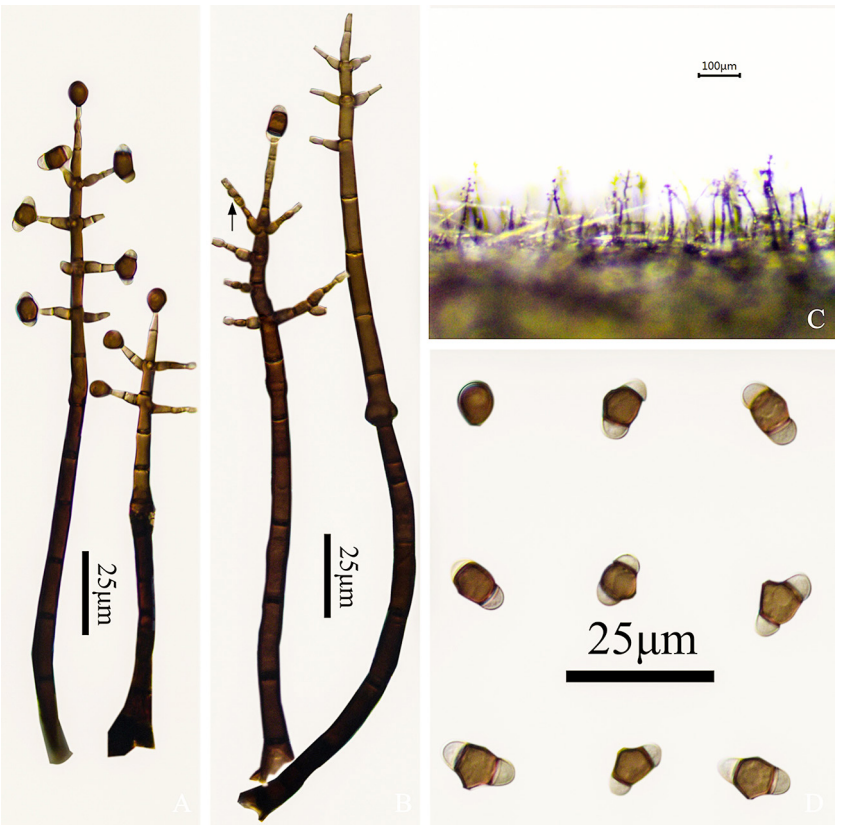

Fig. 1. *Physalidiella pentagona* (holotype, HMZNC 0687).
A. Conidiophores and conidia; B. Stipes and short branches arranged in verticils, apices showing percurrent extensions of conidiogenous cells; C. Colonies arising from twig surface; D. Conidia.

with a slight camber at the apex, narrow truncate base, 1–2.3 μm wide, and with two lateral cells hemispherical, hyaline to subhyaline, smooth-walled, 4–5.5 × 2–4 μm; overall conidial dimensions 5.5–8.5 × 10.5–13 μm.

Comments—Our new species, *P. pentagona,* is distinguished from other *Physalidiella* species by its obviously percurrently extending conidiogenous cells and approximately pentagonal or turbinate middle conidial cell. In addition, the middle conidial cell of *P. pentagona* is slightly shorter than those of *P. elegans* (7–11 μm) and *P. matsushimae* (8–10 μm).

Key to species of *Physalidiella*

1. Conidiogenous cells with 1–4 percurrent extensions,
   conidial central cell approximately pentagonal,
   5.5–8.5 × 5–7.5 µm ..... *P. pentagona*
1. Conidiogenous cells without obviously percurrent extensions
   2
2. Conidial central cell obovoid or ellipsoidal,
   7–11 × 6–7 µm ..... *P. elegans*
2. Conidial central cell fusiform-ventricose or biconic,
   8–10 × 5–6 µm ..... *P. matsushimae*

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